Please type a plus sign (+) inside this box + 02-01-01 A

PTO/SB/05 (4/98)
Approved for use through 09/30/2000. OMB 0651-0032
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. ∋1.53(b))

Attorney Docket No.	C99-879/US/1
First Inventor or Application Identifier	Steven Antosz
Title	VEHICLE SUPPLY CHAIN ANALYSIS SYSTEM
Express Mail Label No.	#EL535887908US

APPLICATION ELEMENTS
See MPEP Chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, D.C. 20231

1. _X_ *Fee Transmittal Form (e.g. PTO/SB/17)
(Submit an original and a duplicate for fee processing)

2. _X_ Specification [Total Pages _18_]
(preferred arrangement set forth below)
-Descriptive title of the Invention
-Cross References to Related Applications
-Statement Regarding Fed Sponsored R&D
-Reference to Microfiche Appendix
-Background of the Invention
-Brief Summary of the Invention
-Brief Description of the Drawings (if filed)
-Detailed Description
-Claims(s)
-Abstract of the Disclosure

3. _X_ Drawing(s) (35 U.S.C. 113) [Total Sheets _10_]

4. Oath or Declaration [Total Pages __]
a. __ Newly executed (original or copy)
b. __ Copy from a prior application (37 C.F.R.∋ 1.63 (d))
(for continuation/divisional with Box 16 completed)

i. __ DELETION OF INVENTOR(S)

Signed statement attached deleting inventor(s) Named in the prior application, see 37 C.F.R. ∋∋ 1.63(d)(2) and 1.33 (b).

5. __ Microfiche Computer Program (Appendix)

6. Nucleotide and/or Amino Acid Sequence Submission
(If applicable, all necessary)

a. __ Computer Readable Copy

b. __ Paper Copy (identical to computer copy)

c. __ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

7. __ Assignment Papers (cover sheet & document(s))

8. __ 37 C.F.R. ∋ 3.37(b) Statement *(when there is an assignee)* __ Power of Attorney

9. __ English Translation Document (if applicable)

10. _X_ Information Disclosure Statement (IDS)/PTO-1449 _X_ Copies of IDS Citations

11. __ Preliminary Amendment

12. _X_ Return Receipt Postcard MPEP 503)

13. __ Statement (s) (PTO/SB/09-12) __ Statement filed in prior application, Status still proper and desired

14. __ Certified Copy of Priority Document(s)
(if foreign priority is claimed)

15. __ Other:

**NOTE FOR ITEMS 1 & 13: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. ∋ 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. ∋ 1.28).*

16. **If a CONTINUING APPLICATION**, Check appropriate box, and supply the requisite information below and in a preliminary amendment:
__ Continuation __ Divisional __ Continuation-in-part (CIP) of prior application No._____
Prior application information: Examiner_____
FOR CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

__ Customer Number or Bar Code Label or _X_ Correspondence address below
(Insert Customer No. or Attach bar code label here)

Name	Mark P Calcaterra				
	DaimlerChrysler Intellectual Capital Corporation				
Address	CIMS 483-02-19				
	800 Chrysler Drive				
City	Auburn Hills	State	Michigan	Zip Code	48326-2757
Country	United States	Telephone	(248) 576-8016	Fax	(248) 576-7905

Name (Print or Type)	Mark P Calcaterra	Registration No.	30,363
Signature	Mark P Calcaterra	Date	JAN 31, 2000

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, D.C. 20231.

Atty. Ref. 99-879
HD&P Ref. 0364-001242

APPLICATION FOR LETTERS PATENT OF THE UNITED STATES OF AMERICA

For:
VEHICLE SUPPLY CHAIN ANALYSIS SYSTEM

By:
STEVEN ANTOSZ

VEHICLE SUPPLY CHAIN ANALYSIS SYSTEM

FIELD OF THE INVENTION

The present invention relates generally to supply chain mapping, and more particularly to a computer-implemented system for identifying opportunities and risks in supply chains.

BACKGROUND

A supply chain includes networks of suppliers, transportation carriers, fabrication sites, assembly locations, distribution centers, and customer locations by which components, services, information and products flow. The raw materials, components and services that result in end products and components occur at a variety of levels in a supply chain. The variety of levels assemble raw components into more complex components which may be processed or combined with additional components at yet other levels in the supply chain. The components are eventually brought together to manufacture end products.

The demand of products from the consumer drives a supply chain. The demand creates activity along the supply chain. The activity along the supply chain consists of services or processes characterized by information such as supplier name, component name, and part's manufacturing location.

Large automotive manufacturing organizations utilize extremely large supply chains involving multiple products or components supported by multiple levels of

processes or services. Large manufacturing organizations have complex and substantially large supply chains, so that determining the flow within the supply chain is often difficult. Furthermore, these supply chains often change rapidly such that products or components have short lifetimes and new products or components are introduced frequently into the supply chain. Thus, complex supply chains having a large and dynamic structure require assessment of the entire chain to determine risks or where improvements can be made.

SUMMARY OF THE INVENTION

In accordance with the teachings of the present invention, a computer implemented supply chain mapping system is provided. A template supplies a workspace that allows a graphic depiction of a supply chain network related to a vehicle manufacturing operation through the use of icons. Each icon pictorially indicates a supply chain function. The icons are arranged on a stencil located in the template. The stencil arranges icons according to related manufacturing interests.

Additional advantages and aspects of the present invention will become apparent from the subsequent description and the appended claims, taken in conjunction with the accompanying drawings in which:

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more fully understood from the detailed description and the accompanying drawings, wherein:

Figure 1 is a computer screen display of the present invention's stencil;

Figure 2 is a computer screen display of the present invention's general information template;

Figure 3 is a computer screen display of the present invention's supplier process perspective template;

Figure 4 is a computer screen display of the present invention's supplier perspective template;

Figure 5 is a computer screen display of the present invention's logistics template;

Figure 6 is a computer screen display of the present invention's international template;

Figure 7 is a graphical display of the present invention's icons;

Figure 8 is a computer screen display of the present invention's icons with textual information;

Figure 9 is a flow chart depicting the operational sequence of the present invention; and

Figure 10 is a flow diagram showing supply chain mapping of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention's supply chain mapping is utilized in a global extended enterprise network to visualize the enterprise and identify risks and opportunities in the manufacturing process. It should be appreciated that other industries besides the automotive industry can utilize the present invention's supply chain mapping system. A

supply chain of the present invention focuses on the process and involves appropriate suppliers, processes, logistics, and other automotive manufacturing factors from all tiers in the supply chain. Supply chain mapping can be used to analyze and establish an efficient and timely flow of material, services and information. The supply chain network contains elements that impact cost, quality, cycle time and technology. Supply chain mapping typically starts with the raw material supplier and ends with the final consumer. Furthermore, the supply chain verifies improvements in quality, total systems cost, cycle time, and technology advancement.

Figure 1 shows a mapping stencil 10 of the present invention that arranges icons 12 into a grouping. Icons 12 are related to vehicle manufacturing factors. By way of example, Figure 7 illustrates icons for use in supply chain maps; however, it should be appreciated that other vehicle manufacturing factors can be represented by an icon. In the preferred embodiment, stencil 10 has icons 12 related to vehicle manufacturing areas including, Tier Three Supplier, Tier Two Supplier, Tier One Supplier, Assy/Mfg, Dealership, Customer, MOPAR Depot, Homologation Consolidation, Transportation Trailer, Transportation (TBD/other), Transportation Ocean, Transportation Rail, Border Crossing, DLC/Plant Provider, Warehouse, Terminal, Database, Process, Inspection Measurement, Packaging, Leadtime, Opportunity, Bottleneck, Supply Chain Risk, Recycle, Hazardous Material, Finished Part and Component/Sub Assy. It should be appreciated that a stencil can relate to specific areas of vehicle manufacturing and an icon represents any factor associated with this network. Stencils directed towards process flow information, transportation,

environmental information and supplier information provide a user with icons that are specific to a user's interest in evaluating the supply chain. For example, a user interested in evaluating efficient process flow may need to represent such manufacturing factors as lead time and bottlenecks, but may choose not to prioritize a need to represent transportation and packaging aspects.

The stencil by grouping related icons facilitates the user's needs in forming a supply chain map. By using a stencil, the user interested in process flow can concentrate on creating a comprehensive supply chain map of the process flow. After a supply chain for the automotive process flow is established, the user can continue to create other views of the supply chain. For example, a stencil specifically for environmental information can help a user focusing on process flow to develop a supply chain map that includes environmental information. A variety of environmental related icons are arranged in a stencil. Such a user may not ordinarily consider or be familiar with environmental factors in developing a supply chain, however, the stencil provides the user with a base from which environmental factors represented by icons are quickly introduced to and selected by the user for integration into the supply chain. The use of such a stencil permits the user to build a supply chain that is comprehensive and considers a variety of factors.

In the preferred embodiment, each icon represents a factor in the supply chain such as, but not limited to, suppliers, processes and components. Each of the icons 12 arranged on the stencil 10 can be selected by the user and moved to the template workspace to create a supply chain map. Each of the icons 12 preferably has a textual

representation of attributes related to the supplier, process or component represented by the icon 12, and can be modified after placed in the workspace of the perspective template. Each icon also can be linked to an information template 20 as shown in Figure 2.

Figure 2 illustrates the screen accessed through a hyperlink. An exemplary information template 20 with data related to a supplier icon and includes, but is not limited to, data indicating part name, supplier, location, the date the part was introduced, cost, warranty issues, and quality issues.

Figures 3, 4, 5 and 6 depict a perspective template having a supply chain 70. The supply chain interconnects a number of levels of suppliers that provide raw materials, and assemble and manufacture components that result in a finished part 66. The Tier One Supplier 52, Tier Two Supplier 54 and Tier Three Supplier 56 are represented by icons and identified by the level in which they function in the supply chain. A supplier that provides the end product 66 is a tier one supplier. A tier two supplier provides a component to the tier one suppliers, and a tier three supplier represents any supplier that provides components to the supply chain before tier two suppliers. Other supply or demand entities are also represented by icons, include, but are not limited to, assembler/manufacturers, dealers and customers. The supply related icons can also be arranged together on a stencil and provided for use in the perspective template.

Logistics operations and carrier operations, including transportation for moving sub-components between suppliers are represented in the supply chain. In the preferred

embodiment, trailer, TBD/other, ocean, rail, border crossings and plant provider icons represent transportation related events, however it should be appreciated that other modes of transportation can be incorporated as icons. The logistics related icons can also be arranged on a stencil and provided for use in the perspective template.

Process flow information and quality control are represented in the supply chain. Icons representing processes, inspection measurements, lead times, bottlenecks and packaging are given by way of example; however, it should be appreciated that other process flow information could be represented by icons. Computer terminals and databases are also represented by icons in the supply chain. The process flow related icons can also be arranged on a stencil and provided for use in the perspective template.

Environmental information is represented in the supply chain map. Icons representing recycling, and hazardous materials, are given by way of example, however it should be appreciated that other environmental information could be represented. The environmental related icons can also be arranged on a stencil and provided for use in the perspective template. Opportunities and supply chain risks are represented by icons to provide an evaluation of the supply chain.

Figure 3 depicts a supplier process perspective template 50 and a stencil 10. The supplier process perspective template generally depicted at 50, has a workspace pre-populated with icons forming a supply chain 70. The icons are selected to pre-populate the template based on the area of interest of the user. For example, if the user is interested in process control, the critical supply chain icon which represents factors that impact cost, quality, and cycle time regarding process control, pre-populate the

template. In the preferred embodiment, the supply chain map 70 is for a finished part 66.

The finished part 66 is downstream in the supply chain 70. Raw materials, suppliers, processes, and component that are inclusive in producing a finished part are provided upstream relative from the finished part. Raw materials, suppliers, processes, and components flow in the supply chain from left to right.

With a continued reference to Figure 3, the supply chain map shows three tiers of suppliers tier three suppliers 56, tier two suppliers 54 and tier one suppliers 52. Downstream from each of the supplies are processes 58. Inspection measurements 60 are located throughout the supply chain map 51.

Each of the tier three suppliers 56 is associated with a process 58 located downstream. Tier three supplier 56(a) is associated with process 58(a). An inspection measurement 60(a) is associated with process 58(a). Process 58(a) is associated with second tier supplier 58(c). An opportunity 64 is associated with second tier supplier 54(c) and indicates a realizable benefit in the supply chain. Resulting benefits in the supply chain are based on improvements in cost, quality, and flow efficiency.

Each of the suppliers 56(b) is associated with a process 58(b) located downstream. Each of the processes 58(b) connects to a second tier supplier 54(e). The components that flow from each of the third suppliers 58(b) to second tier supplier 54(e) create a bottleneck 62. The bottleneck 62 indicates potential problems in the supply chain.

Each of the second tier suppliers 54(c), 54(d), and 54(e) are associated with processes 58(c), 58(d), and 58(e), respectively. A first tier supplier is associated with each of the processes 58(c), 58(d), and 58(e). A process 58(f) is associated with second tier supplier 52. An inspection measurement 60 is associated with process 58(f). A finished part 66 is associated with inspection measurement 60. The finished part then moves in the supply chain map to dealer 68 and then to customers 70.

As discussed above, each of the icons preferably has textual information visually displayed in the icon. In the preferred embodiment, for example, each supplier-related icon 56, 54 and 52, includes textual information identifying: component name, supplier name, supplier location and part number. The textual information is preferably modifiable on the template. Figure 8 shows a template 180 and icons 12 where each icon includes textual information.

The supply process perspective template 50 provides a user interested in the process flow with a framework. The user can use the supply process perspective template and build a more complex supply chain by modifying and adding icons. The pre-populated icons of the supply process perspective template allows a user to begin with a framework that guides the user to create a supply chain in a visually evaluative and modifiable workspace. For example, the supply process perspective template includes inspection measurements that should be identified and used throughout the supply chain. Risk icons and opportunity icons should also be utilized in the supply chain map based on criteria such as, but not limited to, where an inspection measurement icon does not appear between process icons, and, therefore indicates a

potential problem. The user can view the pre-populated template and understand the manner in which to map inspection measurements, risks and opportunities.

Figure 4 illustrates a supplier perspective template 140 that is pre-populated with icons related to a supplier perspective. The supplier perspective template 140 focuses on the suppliers and the associated components or services offered in the supply chain. Figure 5 illustrates a logistics perspective template 150 that is pre-populated with icons related to logistics, including transportation 152. The logistics perspective template 150 includes transportation related icons that focus a user to map transportation before considering other areas of vehicle manufacturing. Figure 6 illustrates international perspective template 160 that is pre-populated with icons related to international factors, such as border crossing 162. The international perspective template 160 allows the user to first focus on international related areas of vehicle manufacture in the supply chain. The perspective templates offer a way in which a variety of users build, evaluate, and modify a supply chain map containing comprehensive and substantially uniform information. The different perspective templates can be interrelated via a hyperlink connection.

Figure 9 illustrates a sequential computer screen display flow chart depicting the operational sequence for the preferred embodiment. Computer screen display 92 identifies the part 104 in the supply chain map. Computer screen display 94 identifies the components 106 in the assembly. For each component, the supplier, supplier location and part number is identified by textual information placed within the icons. Computer screen print 96 indicates the processes 108 that each part must go through

before it reaches the next supplier in the supply chain map. Computer screen display 98 indicates transportation 110, border crossings 112. Computer screen display 100 identifies inspection measurements 114. Computer screen display 102 identifies part storage 116, lead time 118 and bottlenecks 120. Information template 20 is accessed through a hyperlink of individual icons 12.

Figure 10 is a flow diagram showing supply chain mapping and analysis using a supply chain map of the present invention. Decision block 110 determines whether process mapping software is on a computer. Block 112 indicates that a process mapping software package is installed on a computer. Block 114 loads supply chain files onto the computer. Block 116 verifies or identifies supplier chain suitability. Block 118 solicits supplier buy in. Block 120 develops a plan to map and identify risks and opportunities. Block 122 generates a supply chain by using the process mapping software. The generation of the supply chain is based on the criteria of Block 121. Block 123 connects via a hyperlink the supply chain to a database repository for storing specific supply chain icon information. Block 124 reviews a supply chain with stakeholders to find specific opportunities and risks. Block 126 generates, recommends and secures approval for changes and creates action plans. Block 128 implements changes. Block 130 measures results of supply chain mapping.

The invention being thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.

CLAIMS

What is claimed is:

1. A computer implemented apparatus for analyzing a manufacturing operation that contains a supply chain, said manufacturing operation having a plurality of manufacturing areas, said apparatus comprising:

a template for supplying a workspace to depict the supply chain related to the manufacturing operation;

icons which are predefined to depict factors of a supply chain; and

a stencil for storing the icons associated with one of the manufacturing areas.

2. The apparatus of Claim 1 wherein said icons are selected from the stencil and moved to the template.

3. The apparatus of Claim 1 further includes a plurality of icons that are connected to show a supply chain flow.

4. The apparatus of Claim 1 further includes at least one perspective template having at least one supply chain icon, the perspective template providing a pre-populated framework to evaluate the manufacturing operation.

5. The apparatus of Claim 1 further includes at least one stencil selected from the group consisting of process flow stencil, logistics stencil, and environmental stencil.

6. The apparatus of Claim 4 wherein said perspective template is selected from the group consisting of international template, logistics template, supplier template, and supplier process template.

7. A computer implemented supply chain analysis apparatus comprising:

a template for supplying a workspace to depict a supply chain related to a manufacturing operation;

icons which are predefined to depict factors of an automotive supply chain; and

a stencil for storing icons associated with a vehicle manufacturing area.

8. The apparatus of Claim 7 wherein said icons are selected from the stencil and moved to the template.

9. The apparatus of Claim 7 further includes a plurality of icons that are connected to show a supply chain flow.

10. The apparatus of Claim 7 further includes at least one perspective template having at least one supply chain icon, the perspective template providing a pre-populated framework to evaluate the manufacturing operation.

11. The apparatus of Claim 7 further includes at least one stencil selected from the group consisting of process flow stencil, logistics stencil, and environmental stencil.

12. The apparatus of Claim 10 wherein said perspective template is selected from the group consisting of international template, logistics template, supplier template, and supplier process template.

Uncontrolled when printed

13. A method for supply chain mapping and analyzing of vehicle manufacturing related to parts and components comprising the steps of:

(a) identifying a component or system for supply chain mapping;

(b) providing the supply chain map with a part icon representing the part;

(c) identifying the components used to assemble the part;

(d) providing the supply chain map with supplier icons representing the suppliers who supply the components at various tiers; the supplier icons selected from the group consisting of: Tier One Supplier, Tier Two Supplier and Tier Three Supplier; and

(e) using icons to depict risks and opportunities associated with the supply chain of step (d).

14. The method of Claim 13 further includes identifying via placing icons on the supply chain at least one process related to each item of the components.

15. The method of Claim 13 further includes identifying via placing icons on the supply chain map at least one mode of transportation related to the components.

16. The method of Claim 13 further includes identifying via placing icons on the supply chain map border crossings related to the component.

17. The method of Claim 13 further includes hyperlinking an icon to an information screen.

18. The method of Claim 13 further includes modifying the supply chain map based on analyzing the supply chain.

19. The method of Claim 22 further includes hyperlinking an icon to a database.

VEHICLE SUPPLY CHAIN ANALYSIS SYSTEM

ABSTRACT OF THE DISCLOSURE

A computer implemented supply chain analysis apparatus permits user to create a supply chain map for analyzing a manufacturing operation. A template forms a workspace to depict a supply chain related to a manufacturing operation. Supply chain icons are predefined to depict specified aspects and relationships of an automotive supply chain function. The stencil stores icons which are related to a manufacturing area. The icons which are related to a manufacturing area are grouped together on a stencil.

DOCKET NO. 04-1850

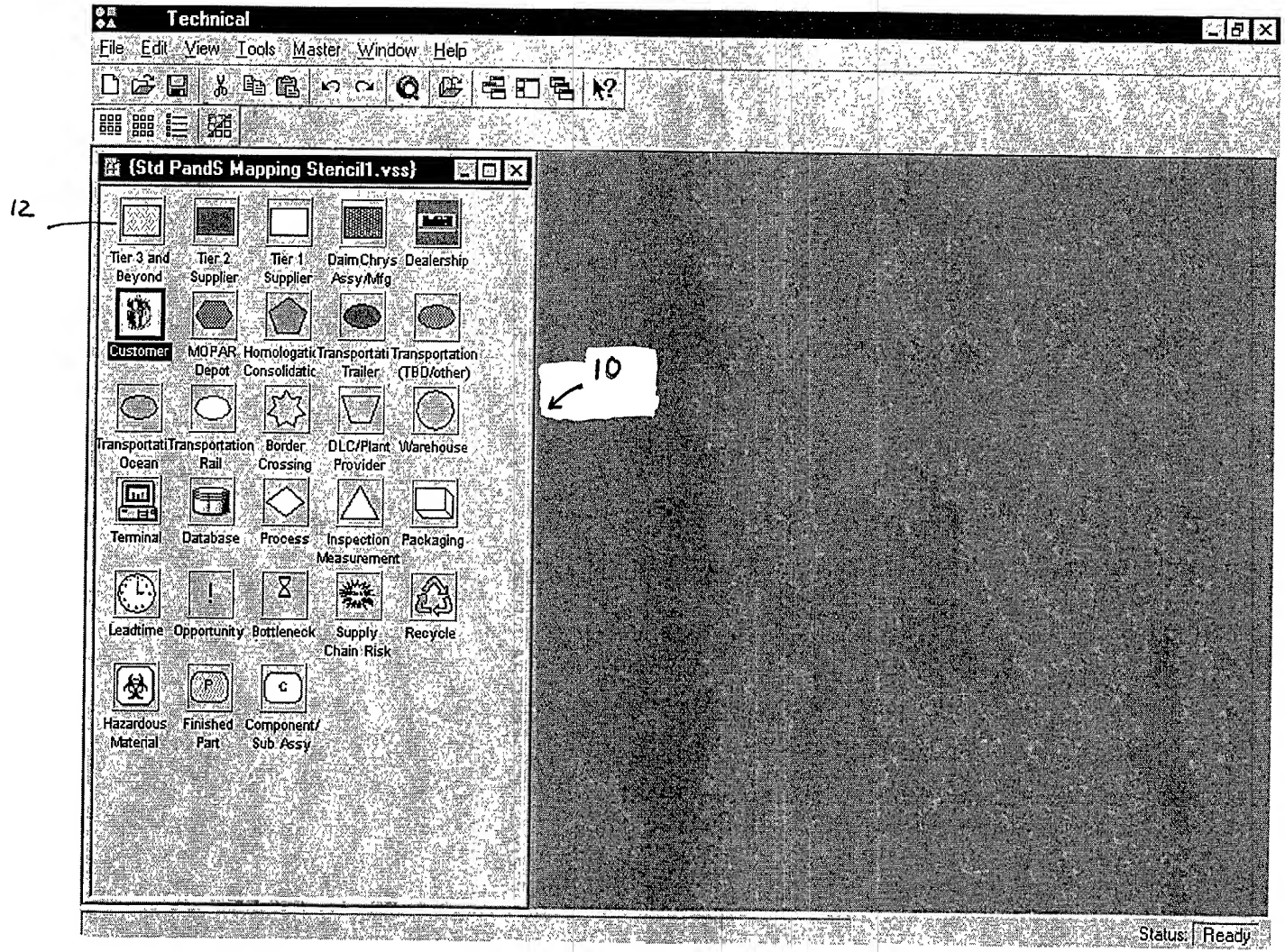
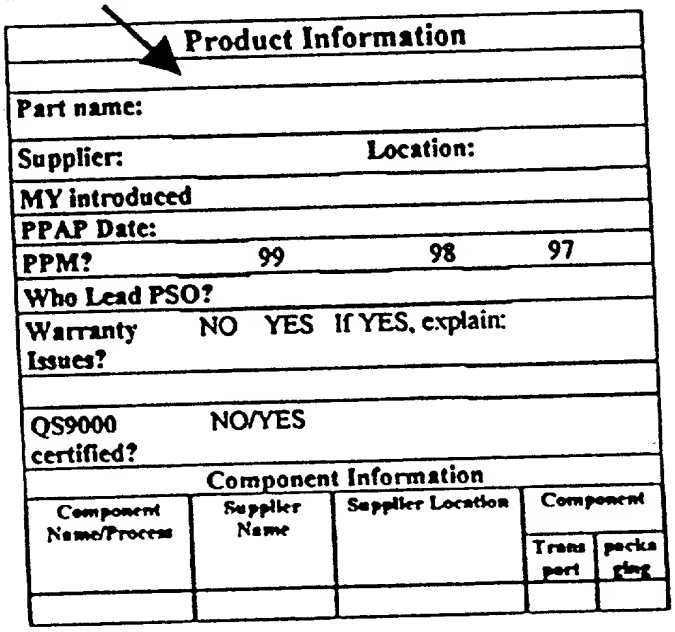


Fig. 1

Screen accessed through hyperlink



Product Information				
Part name:				
Supplier:		Location:		
MY introduced				
PPAP Date:				
PPM?	99	98	97	
Who Lead PSO?				
Warranty Issues?	NO YES	If YES, explain:		
QS9000 certified?	NO/YES			
Component Information				
Component Name/Process	Supplier Name	Supplier Location	Component	
			Transport	packaging

20

Fig. 2

TITLE:	Supplier Process		
COMPANY:		CREATOR:	DaimlerChrysler
DATE:	TIME: 10:25:46 AM	PG: 1	OF 1 PGS
FILENAME:	Drawing2		

Tier 3 and Beyond | Tier 2 Supplier | Tier 1 Supplier | Warehouse | DaimChrys Receiving | MOPAR Depot | Homologation/ Consolidation | Border Crossing | Transportati Trailer | Transportati (TBD/other | Transportati Ocean | Transportatior Rail | DLC/Plant Provider | Dealerst

Customer | Recycle | Hazardous Material | Terminal | Database | Bottleneck | Process | Inspection Measurement | Packaging | Opportunity | Supply Chain Risk | Leadtime | Finished Part | Compone Sub Ass

Mapping Help

10

50

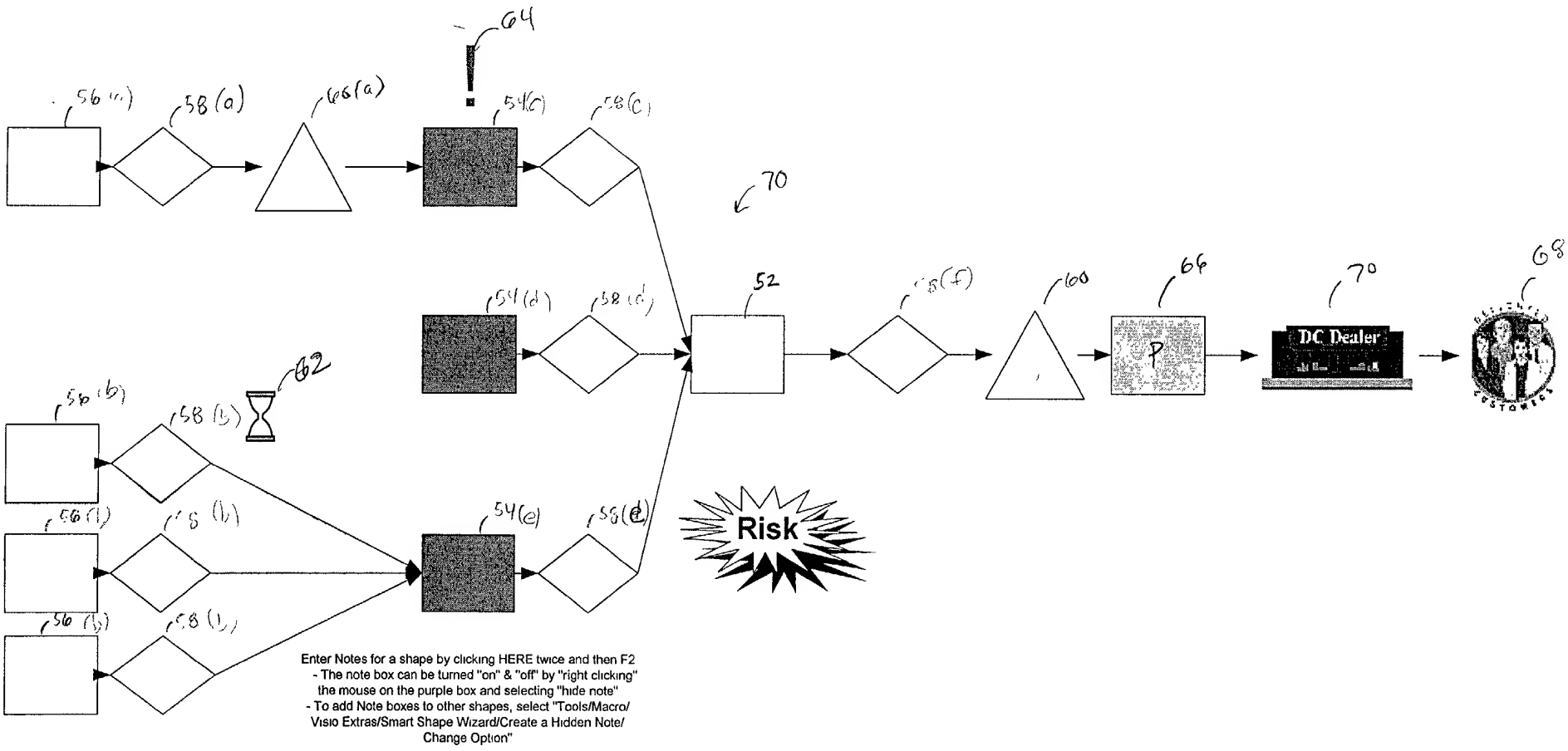


Fig 3

TITLE: Supplier

COMPANY:		CREATOR:	DaimlerChrysler		
DATE:	TIME:	10 26.15 AM	PG: 1	OF 1	PGS
FILENAME:	Drawing3				

Tier 3 and Beyond | Tier 2 Supplier | Tier 1 Supplier | Warehouse | DaimChrys Assy/Mfg | MOPAR Depot | Homologation/ Consolidation | Border Crossing | Transportati Trailer | Transportati (TBD/other | Transportati Ocean | Transportation Rail | DLC/Plant Provider | Dealership

Customer | Recycle | Hazardous Material | Terminal | Database | Bottleneck | Process | Inspection Measurement | Packaging | Opportunity | Supply Chain Risk | Leadtime | Finished Part | Component Sub Assy

Mapping Help

16

140

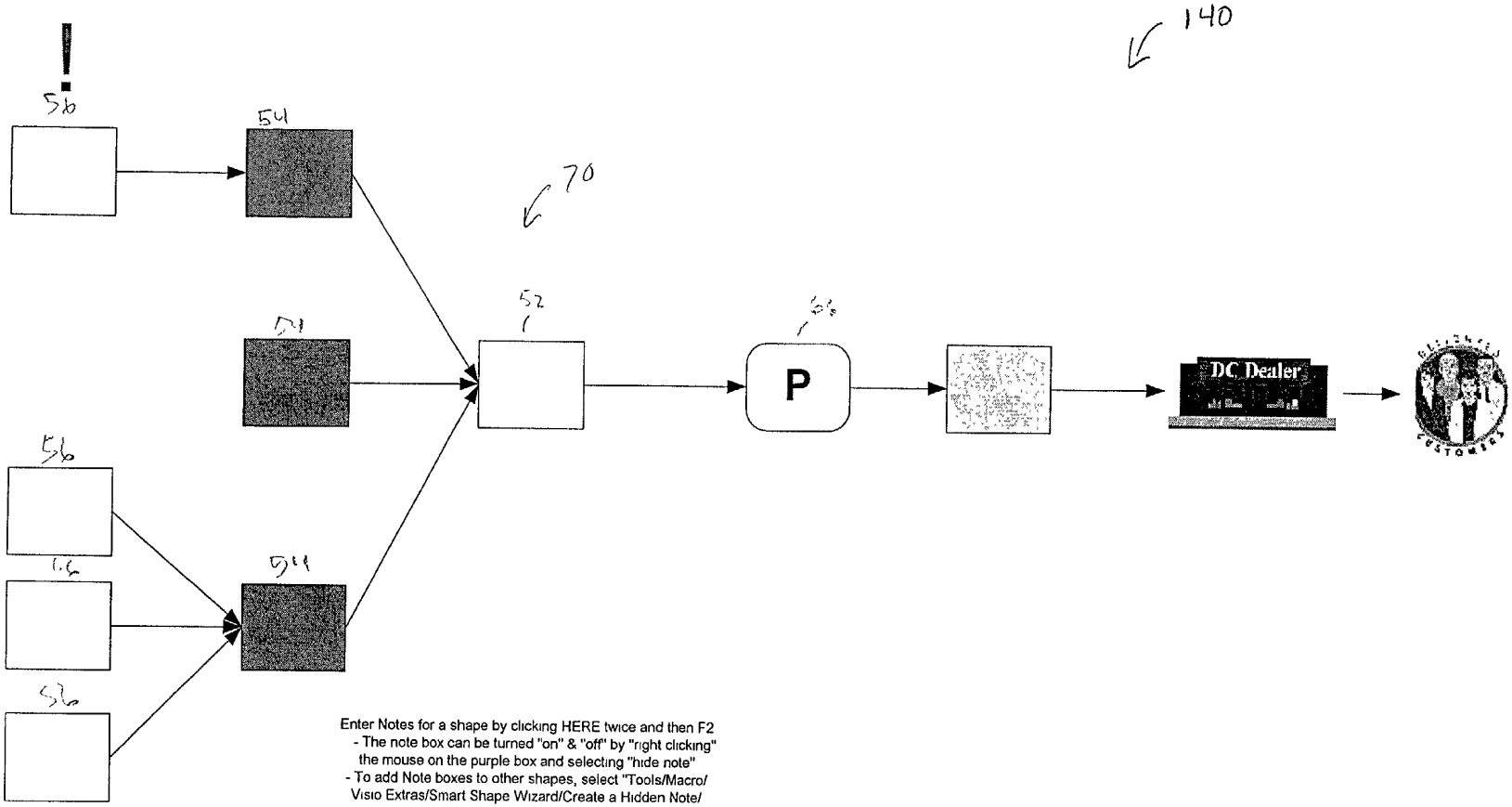


Fig 4

09194590 .013100

TITLE: Logistics

COMPANY: CREATOR: DaimlerChrysler

DATE: TIME: 10:31:07 AM PG: 1 OF 1 PGS

FILENAME: Drawing5

Tier 3 and Beyond | Tier 2 Supplier | Tier 1 Supplier | Warehouse | DaimChrys Assy/Mfg | MOPAR Depot | Homologation/ Consolidation | Border Crossing | Transportati Trailer | Transportati (TBD/other | Transportati Ocean | Transportation Rail | DLC/Plant Provider | Dealership

Customer | Recycle | Hazardous Material | Terminal | Database | Bottleneck | Process | Inspection Measurement | Packaging | Opportunity | Supply Chain Risk | Leadtime | Finished Part | Component Sub Assy

Mapping Help

10

150

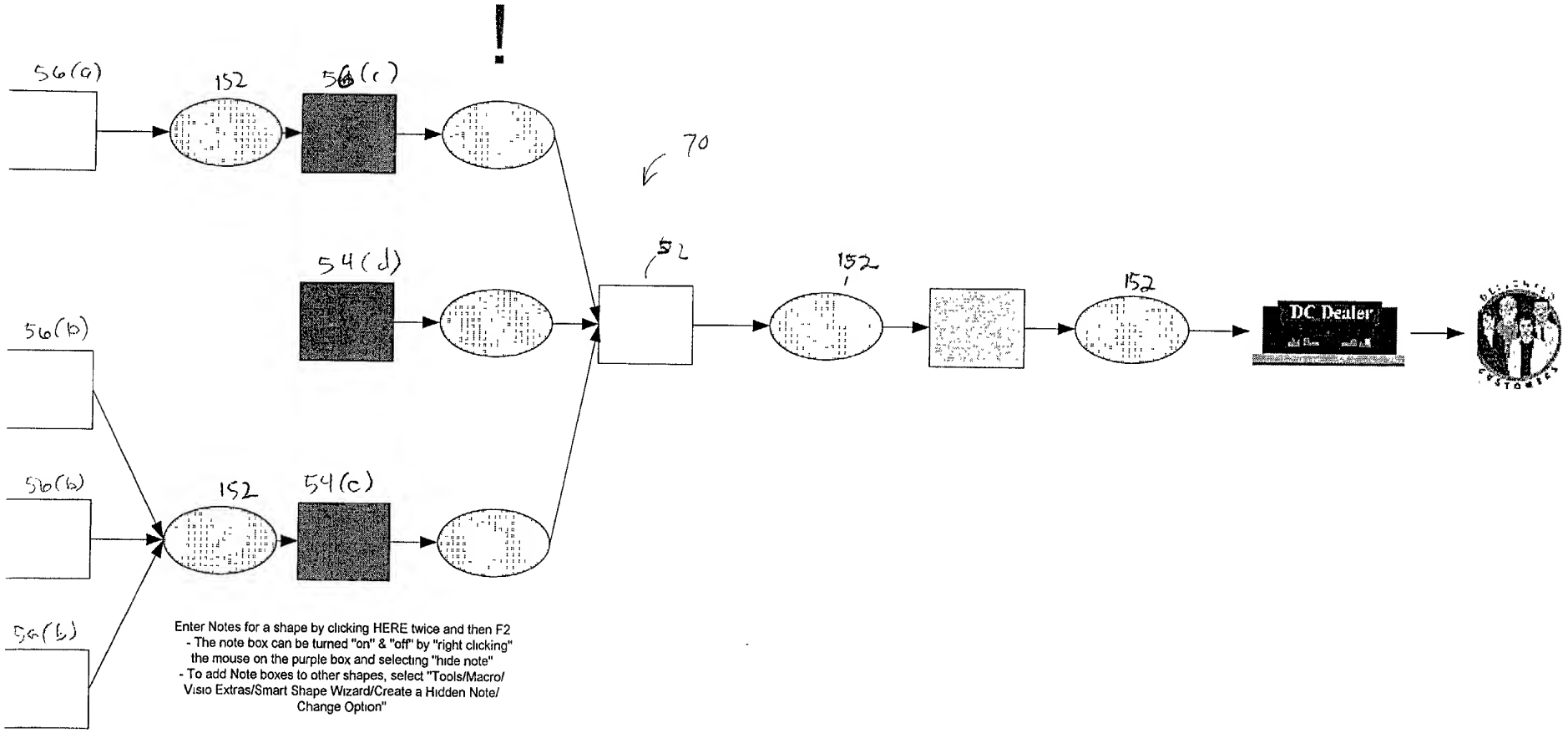


Fig 5

TITLE:	Risk International			
COMPANY:		CREATOR:	DaimlerChrysler	
DATE:		TIME:	10:25:24 AM	PG: 1 OF 1 PGS
FILENAME:	Drawing1			

Tier 3 and Beyond | Tier 2 Supplier | Tier 1 Supplier | Warehouse | DaimlerChrysler Assembly Plt | MOPAR Depot | Homologation/ Consolidation | Border Crossing | Transportati Trailer | Transportati (TBD/other | Transportati Ocean | Transportation Rail | DLC/Plant Provider | Dealersh

Customer | Recycle | Hazardous Material | Terminal | Database | Bottleneck | Process | Inspection Measurement | Packaging | Opportunity | Supply Chain Risk | Leadtime | Finished Part | Compone Sub Ass

Mapping Help

10

160

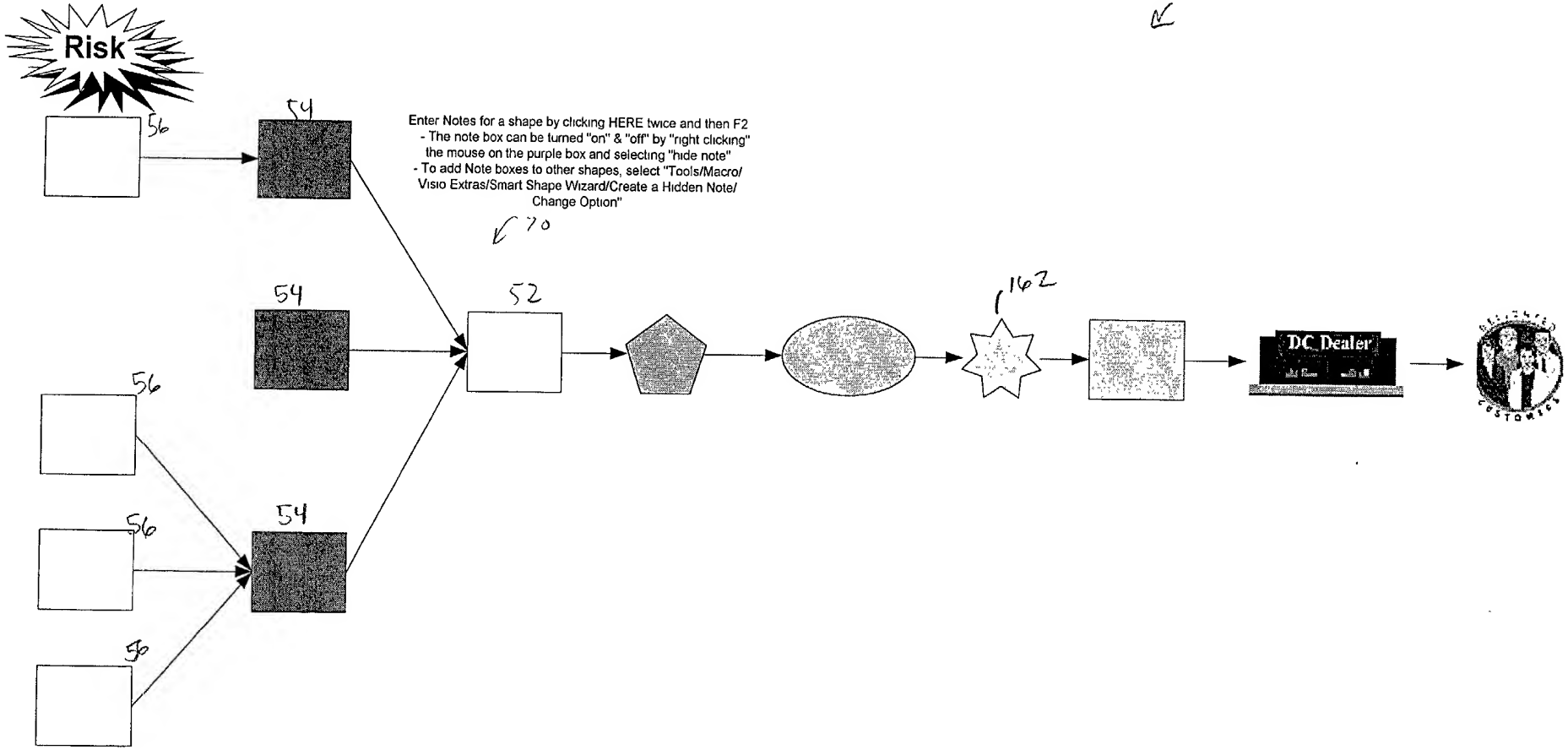


Fig 6

Definitions of Icons & Supply Chain Shapes

(Recommended Information to Input – each shape typically includes the supplier/carrier, location (city & state), and component/service provided.

Tier 3 and beyond – furnish goods/services to a Tier 3 & beyond supplier

Tier 2 Supplier – furnish goods/services to a Tier 1 supplier

Tier 1 Supplier – furnish goods/services directly to DaimlerChrysler facility

Warehouse – building that stores goods/materials

DC Assy/Mfg. – represents a DaimlerChrysler manufacturing or assembly plant

MOPAR Depot – includes Service & Parts Distribution Centers

Homologation/Consolidation – location center that combines goods for standard distribution

Border Crossing – represents an international crossing

Transportation Trailer – transporting material by roadway

Transportation (TBD/Other) – includes non-standard transportation methods (e.g. air carrier)

Transportation Ocean – transporting goods/materials by ship

Transportation Rail – transporting material by railroad

P

Finished Part – represents a completed components/assembly

C

Component/Sub Assy – represents a component or sub-assembly of the finished part

Dealership – franchise or company-owned facility to market cars/trucks in an area

DLC/Plant Provider – Dedicated Logistics Carrier or ILC

Customer – purchaser of DaimlerChrysler automotive product

Hazardous Material – represents products that present danger to humans and/or the environment

Recycle – process to re-direct materials for re-use

Terminal – represents electronic communication (e.g. EDI)

Database- information management system

Bottleneck – represents a process step that slows up progress

Process – a series of steps required to furnish the completed good/service

Inspection Measurement – represents examination of good/service

Packaging – represents the container utilized to transport goods (includes rack returns)

!

Opportunity – represents the identification of improvements in cost, quality, and cycle time

Risk

Supply Chain Risk – represents a chance of exposure or loss

Lead-time – represents the time required

Fig. 7.

TITLE:	X6 Striker Hood Latch		
COMPANY:	Dura Automotive	CREATOR:	
DATE:	TIME:	PG: 1 OF 1 PGS	
FILENAME:			

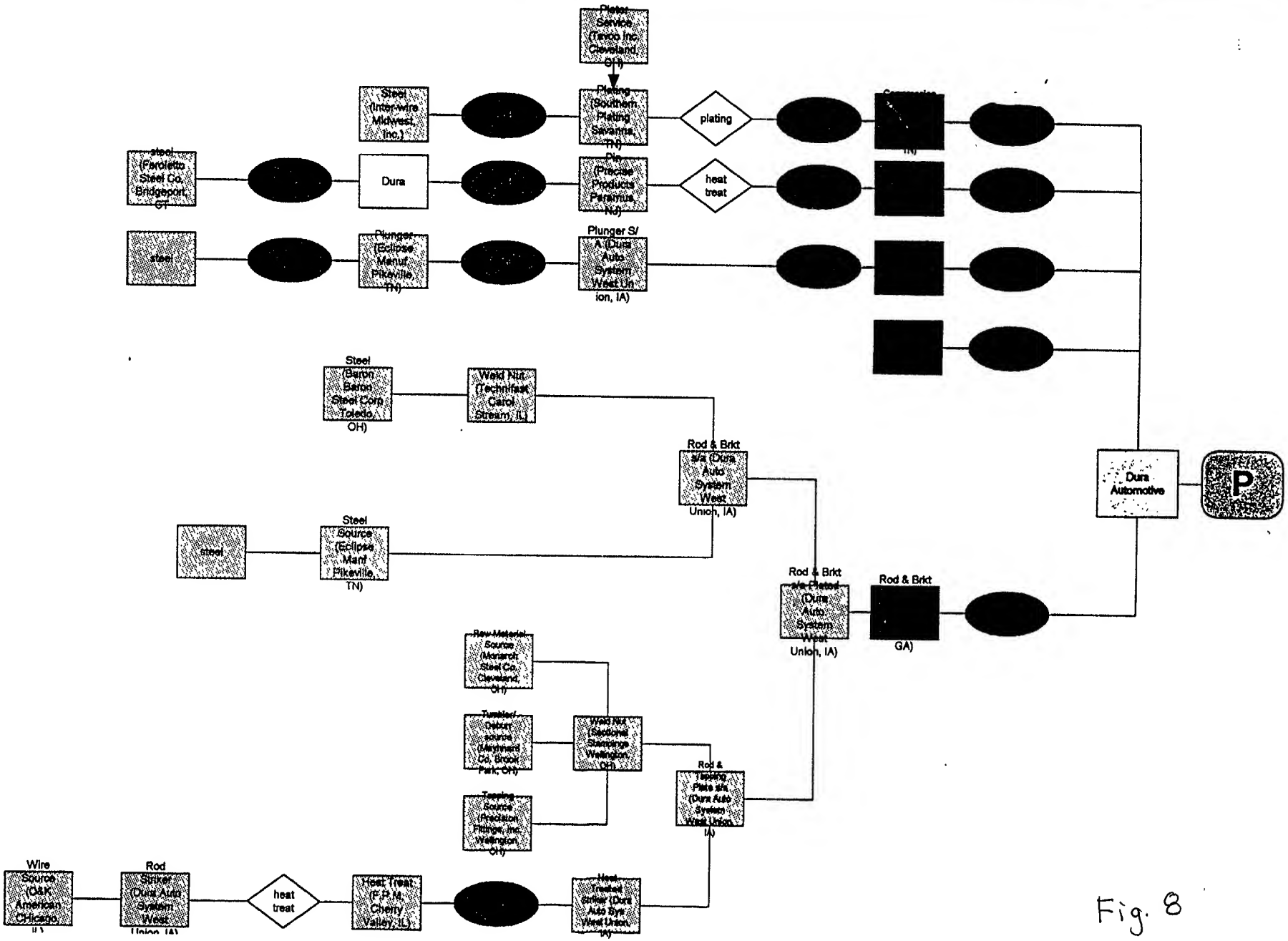
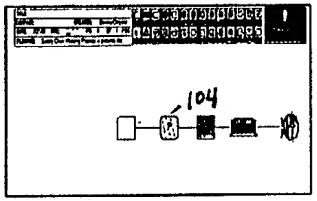


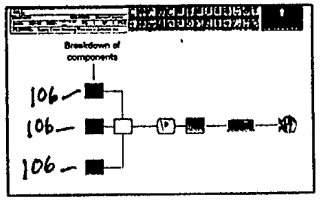
Fig. 8

1) Identify the part/assembly to be mapped and the information that you wish to include on the map.



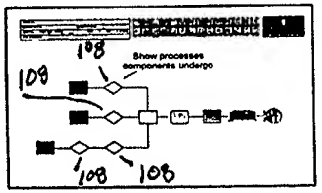
← 92

2) Identify the components in the assembly. For each component provide supplier, supplier location and part number.



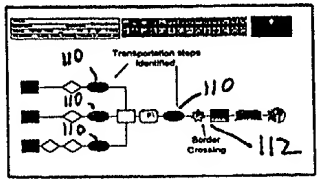
← 94

3) Indicate the processes that each part must go through before it reaches the next supplier in the process.



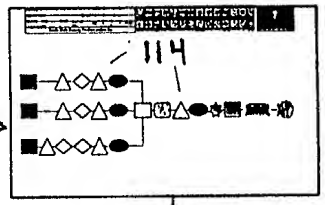
← 96

4) Show all transportation steps between each suppler. Identify border crossings and mode of transportation.



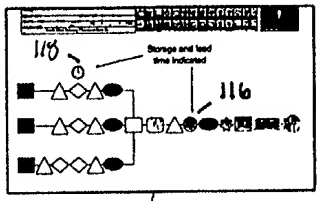
← 98

5) Identify inspection points or processes.



← 100

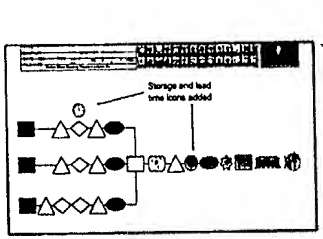
6) Identify part storage, lead-time and bottlenecks.



← 102

7) Additional information can be added to further develop the supply chain map including a supplier's quality rating or dates that key inspections have or will occur. This can be included on the map or hyperlinked through an Excel or Access document

Screen accessed through hyperlink



Product Information			
Part name:			
Supplier:		Location:	
MY introduced			
PPAP Date:			
PPM?	99	98	97
Who Lead PSO?			
Warranty Issues?	NO YES If YES, explain:		
QS9000 certified?	NO/YES		

Component Information				
Component Name/Process	Supplier Name	Supplier Location	Component	
			Transpart	packa ging

20

Fig. 9

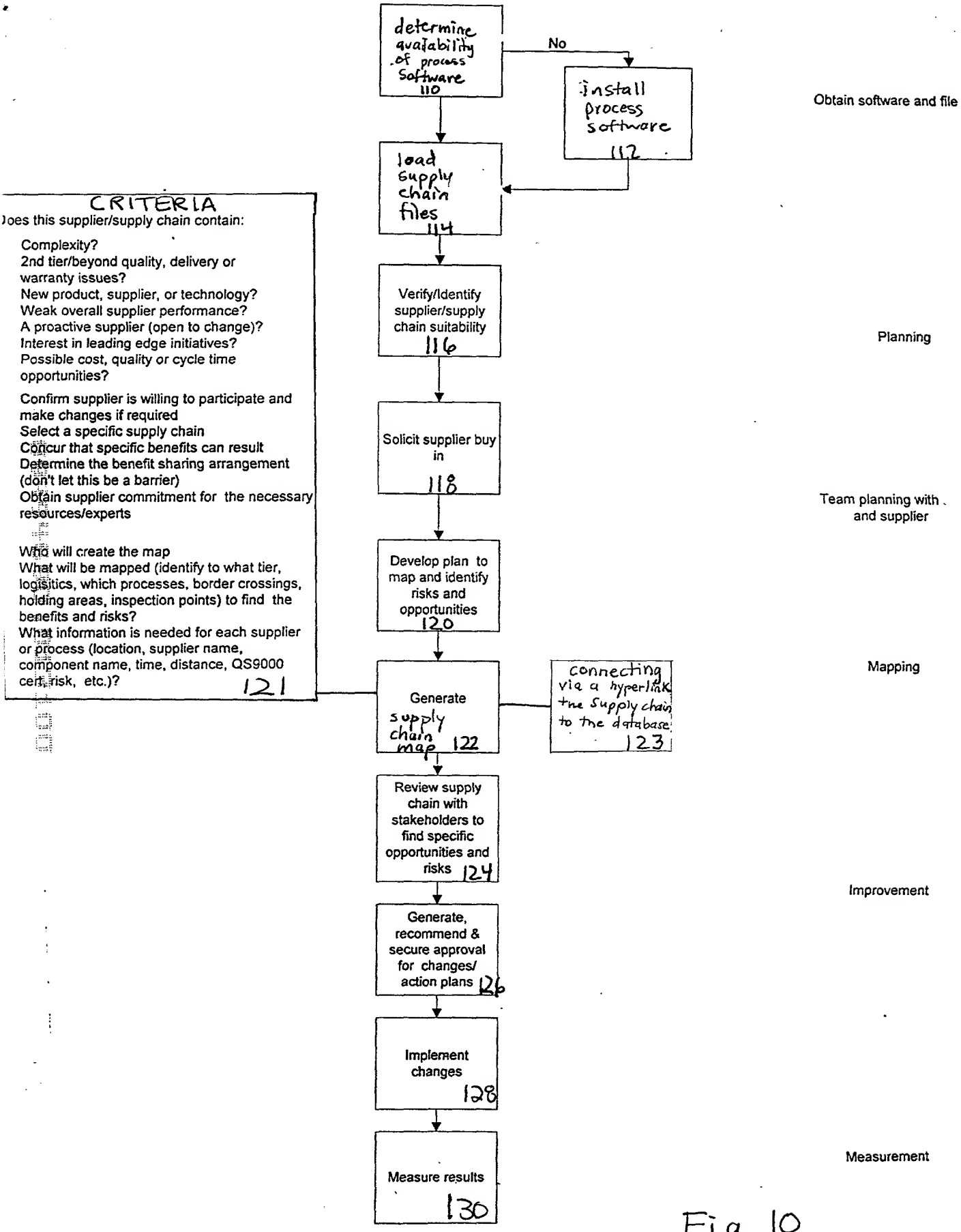

determine availability of process Software 110
No
install process software 112
load supply chain files 114
Verify/Identify supplier/supply chain suitability 116
Solicit supplier buy in 118
Develop plan to map and identify risks and opportunities 120
Generate supply chain map 122
connecting via a hyperlink the supply chain to the database 123
Review supply chain with stakeholders to find specific opportunities and risks 124
Generate, recommend & secure approval for changes/ action plans 126
Implement changes 128
Measure results 130
CRITERIA
Does this supplier/supply chain contain:
Complexity?
2nd tier/beyond quality, delivery or warranty issues?
New product, supplier, or technology?
Weak overall supplier performance?
A proactive supplier (open to change)?
Interest in leading edge initiatives?
Possible cost, quality or cycle time opportunities?
Confirm supplier is willing to participate and make changes if required
Select a specific supply chain
Concur that specific benefits can result
Determine the benefit sharing arrangement (don't let this be a barrier)
Obtain supplier commitment for the necessary resources/experts
Who will create the map
What will be mapped (identify to what tier, logistics, which processes, border crossings, holding areas, inspection points) to find the benefits and risks?
What information is needed for each supplier or process (location, supplier name, component name, time, distance, QS9000 cert, risk, etc.)?
121
Obtain software and file
Planning
Team planning with and supplier
Mapping
Improvement
Measurement

Fig. 10

Attorney Docket No. C99-879/US/1

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As below named inventors, We hereby declare that:

Our residences, post office addresses and citizenships are as stated below next to our names.

We believe we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled:

VEHICLE SUPPLY CHAIN ANALYSIS SYSTEM

the specification of which is attached hereto.

We hereby state that we have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

We acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Power of Attorney: As a named inventor, we hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Donna L Berry,	Registration No. 36,451
Mark P Calcaterra,	Registration No. 30,363
William J Coughlin,	Registration No. 29,143
Roland A Fuller III,	Registration No. 31,160
Marc Lorelli,	Registration No. 43,759
Kenneth H MacLean,	Registration No. 25,236
Lawrence J Shurupoff,	Registration No. 30,219
Jennifer M Stec,	Registration No. 35,379
James R Yee,	Registration No. 34,460

Send Correspondence to: Mark P Calcaterra, CIMS 483-02-19
DaimlerChrysler Intellectual Capital Corporation
800 Chrysler Drive East
Auburn Hills, Michigan 48326-2757

Direct telephone calls to: Mark P Calcaterra, (248) 576-8016

Full name of Inventor: Steven Antosz

Inventor's Signature: _____ Date: _____
Residence: 180 Lockwood, Ortonville, MI 48462
Post Office Address: Same as above
Citizenship: United States